

THE EVOLUTION OF GLOBAL POLITICS

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ABSTRACT

The rise and decline of world powers has attracted much scholarly attention in recent years. The theory of long cycles answers parsimoniously the question: why, in the past half millennium, have Portugal, the Dutch Republic, Britain (twice), and the United States risen to global leadership while others failed to do so? This accounts for the success, or failure, of individual states, but to explain the entire sequence we need to employ an evolutionary paradigm that proposes that each of these long cycles is one mechanism in a spectrum of global evolutionary processes. The leadership succession is an intermediate stage in the evolution of global politics whose next likely major phase, reaching a high point later in the 21st century, will be the gradual absorption of the informal role of global leadership, when embedded in a democratic community, into a network of more formal positions within an emerging global organization of a federalist character. The conditions of that process can now be specified.

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INTRODUCTION

The rise and decline of global powers has in recent years drawn considerable attention among students of world politics and society. Work has focussed on two questions: why do some states rise to a unique position of global leadership while others fail? And why is that those powers that have risen so successfully ultimately also tend to decline?

It is argued in this paper that these two questions can now be answered parsimoniously within the framework of the theory of long cycles of global politics. The first part of the paper proposes such an answer, and illustrates it with the help of critical examples.

But the rise and decline of world powers is not all there is to structural world politics, or to the theory of long cycles. As every student of these subjects is uneasily aware, there is more here than the coming and going of mighty states. The global political system today is radically different from what it was a thousand years ago - at which time it arguably did not exist at all - and it also is probably quite different from what it will become,

say, one or two centuries into the future.

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It is different not only because it is obviously more complex, but it is also different in a patterned way that suggests higher performance and greater efficacy, in other words, cumulative learning, but also greater dangers. That is why an explanation of structural change in world politics, while focussing on the fortunes of global leadership, must set its sights higher, and show not only how and why individual states rise and decline, but also what the entire picture adds up to. A structural analysis of world politics must describe, therefore, a basic process whose principal mechanism in recent centuries has indeed been the rise and fall of world powers, but one that has itself been embedded in a larger movement: the evolution of the global polity.

Our work suggests that global leadership succession is an intermediate stage of an evolutionary process that went through several instances of global leadership, but one whose likely next major phase will be the gradual absorption of the informal role of global leadership, embedded in a democratic community, into a wider network of more formal positions with global responsibilities.

Thus it is for us to show in this paper how, on a

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canvass of a thousand years, the trajectory of world politics shines as a thrust away from failed efforts to establish world empire, through increasingly intricate exercises in global leadership, towards more and more democratic forms of global organization that are mostly yet to be invented.

I. EXPLAINING RISE AND DECLINE

The Propositions

A premise of this paper is the "existence", in the past half millennium of global politics, of a role of leadership exercised by a succession of nation-states. While the precise characteristics of this phenomenon remain a matter of debate, the basic fact of a series of leading powers is increasingly taken for granted. The list of states constituting this sequence differs in particulars, but as William Thompson has argued at some length (1988:Ch.2, esp.31-34), the similarities of position on this matter are greater than the differences. Scholars of diverse orientations, including Robert Gilpin (1981), Immanuel Wallerstein (1984), Paul Kennedy (1987), and Joshua Goldstein (1988) each present such a list, and all lists agree that the United States is the most recent case in point, and Britain the second most recent and relevant.

The variant of this approach which we explore in this paper is the theory of long cycles, successive treatments of which include, but are not limited to, Modelski 1978, 1987, 1990a, and Modelski & Thompson 1988, and for comparative analysis, in particular Thompson 1988. In our approach, a long cycle of global politics marks the rise or decline of one world power. As shown in Table 1, the powers which were successively selected by that

process for a global leadership role included Portugal, the Dutch Republic, Britain, and the United States, with challengers being Spain, France, and Germany. The challengers shown in Table 1 are those leading the losing coalition in the next global war; that is Spain, shown with Portugal, leads the "opposition" in the "macrodecision" phase, shown as starting after 1580. The data arrayed in this table simplify the historical descriptions presented in Modelski (1990:15), yet they have been staples of work in this field for the last decade.

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Table 1: Periodic Table of Long Cycles
(learning mode)

| Phases | | | | |
|------------------------|------------------------|--------------------|-----------|--------------------------|
| Agenda- setting | Coalition- building | Macro- decision | Execution | Leadership Opposition |
| starting in | | | | |
| West-European era | | | | |
| 1430 | 1460 | 1494 | 1516 | Portugal Spain |
| 1540 | 1560 | 1580 | 1609 | Dutch Rep. France |
| 1640 | 1660 | 1688 | 1714 | Britain I France |
| 1740 | 1763 | 1792 | 1815 | Britain II Germany |
| Post-West-European era | | | | |
| 1850 | 1873 | 1914 | 1945 | United States |
| 1973 | 2000 | 2026 | 2050 | |

Source: after Modelski 1990a:15

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Continuing our discussion of Table 1, we note that each line (or row), comprised of four phases, represents the "learning" long cycle attributable to one world power. It details the steps by which that state rose (or achieved selection) to that position. Thus, the first line shows that Portugal reached the global leadership position by 1516, following a process that started in about 1430 and whose other major steps may be dated as 1460

and 1494. While Portugal features in this account as a world power, Spain is shown emerging as the next global challenger - that is, as one that will be particularly active throughout the next cycle (shown on the next line).

Each line in Table 1 stands for one cycle and traces the "rise" (or selection) of a world power. This makes the table a representation of the learning model of the long cycle; the alternative, "leadership" model also consists of four stages or phases, but this model starts with global war, and world power, and focuses upon symptoms of "decline" via "delegitimation" and "deconcentration".

Such "decline" may or may not occur in the next cycle. Britain is shown to have experienced two learning cycles, and nothing in this presentation allows us to prejudge whether one term, or two terms, constitute the "normal" tenure of the office of global leadership. We can say, however, that the first four rows of Table 1 form one bloc of four cycles, in as much as these four lines share at least one important commonality: each and every one has a West European, oceanic base. With the advent of the United States we observe a shift away from Western Europe. That is why the table labels the earlier bloc the West European era of global politics, as distinct from a "post-West European" era which is shown to have begun in 1850 and become serious after 1945. The term "post-West European" is a provisional one, intended to

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highlight an important shift of emphasis in the direction of a globally-oriented "basing mode", but leaving open the possibility that, in the future, a more extended experience will allow the choosing of a more precise designation.

Given the "existence" of such a leadership role, how do we explain the observed facts of "rise," that is the selection of some and the failed challenges of the others? For purposes of this analysis, we prefer the term selection because it brings out the point that global leadership is a position that is sanctioned by a systemic, collective process, and is not merely a matter of individual effort and national power or superior productive potential. The reference to "learning" also makes it clear that we have here a role whose elements need to be acquired via an extended learning process.

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The theory therefore proposes that:

- (1) A nation-state accedes to global leadership by
 - a. successfully undergoing a four-phased process of selection (or learning) consisting of Agenda -setting, Coalition-building, Macrodecision, and Execution; and
 - b. acquiring or exhibiting the qualifications needed for selection to that position, namely politico -strategic organization for global reach, lead economy, open society, and responsiveness to global problems.

It is a corollary of the first proposition that:

- (2) Challengers do not accede to global leadership because they
 - a. fail to complete the selection process, and lose in the Macrodecision phase in particular; or because they
 - b. lack the necessary qualifications for that position, as set out under (1b).

Propositions (1) and (2) might be thought of as constituting a "recipe" for global leadership: each gives us both the "instructions" and the "ingredients" necessary for producing (or failing to produce) the right "menu" of policies for structural change in the global system. We might also think of the instructions as furnishing the "program" and the ingredients, or as furnishing the "data" required for implementing that program.

To extend these analogies, we might recall that the genome (one set of chromosomes with the genes they contain) might

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also be thought of as a program: as the instructions for building an organism (Wesson 1991:144). The genome is not a blueprint, a scaled-down model of an organism, but rather a code or a set of instructions (such as those found in a cookery book) for carrying out a sequence of activities. Furthermore, a crucial characteristic of a recipe is its irreversibility (Dawkins 1988:295 ff). That is why the selection process is not a blueprint of world order, but only a specification of steps by which a search for a better order might be conducted.

An ambiguity inheres in this notion of a program for an evolutionary process. It might mean a set of rules devised and acted upon by participants, and inferred by observers, but it might also be a regularity that inheres in that same process. A similar problem attaches to the notion of calendars that, via astronomy, were once the principal programs organizing the emergence of civilization. A calendar might be thought of as a program that orders a temporal sequence and tells us how to act in relation to it; or else it might also be the elucidation of a natural order governed by the motions of the planets around the sun. That is how the long cycle could also be regarded as a

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calendar of world politics.

We notice, finally, that the theory also allows us to differentiate among the winners and losers in the global leadership stakes of the past half-millennium. Those that "decline" and fail to make it to a second term are those that have "failed" in their second bid, for reasons specified in propositions (1) and (2), that is, for disobeying the instructions and neglecting to bring together the necessary ingredients. In other words, we do not need separate theories of rise and decline; a good theory of "rise" has implicit in it a theory of decline. The problem of continuance of global leadership is identical with that of

re-selection.

Let us now examine in some more detail these two propositions.

Selection

A basic observational datum for our study is the long cycle: a century-long stream or time-line of political events at the global level linking the strategies or fortunes of a number of prominent actors, states and others that compete for global leadership. The fact of competition makes it plain that

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these actors engage in "selection," that is, in a process of collective choice. Selection is a mechanism by which a choice is made among candidates for an office, and the policies they propose. Elections compose, of course, one class of selection processes, though there are others as well.

Suffice it to say that, at the global level and in the experience of modern times, some nation-states have competed for the largely informal position of global leadership in major armed conflicts that we call global wars, and have acceded to that position by winning those wars and playing a leading role in the winning coalition. We can regard those wars as "macrodecisions" because they rendered collective decisions that proved to be, for a time, binding for the whole of the global system. Just as election campaigns and electoral contests punctuate the political life of a nation, so have global wars lent organization to the politics of the global system, and to each long cycle.

That is why the long cycle is a political selection process. Analytically, or more generically, it can also be described as a four-phased "learning" process (Modelski 1987:99 ff, 1990). It is a learning rather than a routine process

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because it involves coping and adapting to global problems for which there are no routine solutions. Such structural challenges include major threats to global security, general problems of global system organization, and specific political questions arising out of the selection process such as: where is the next global leadership and challenge coming from? That is, global problems might be classified as negative or positive (threats or opportunities), those arising specifically out of the functioning of global politics, and others that concern wider structures (including the economy).

Who are the participants in structural global politics? In the political sphere, the principal participants are the global powers and their leaders, including the "incumbent" world power and its actual and potential challengers, and for some purposes, their forces of global reach; as well as global organizations (to the degree that they might exist, such as the United Nations). And, at the interface of politics and other global processes: national, regional and global coalitions and parties that exert influence on global issues; agents of the global economic order such as world banks and global corporations; and instruments of

world opinion such as the media, or epistemic communities.

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In a simplified analysis, and for the earlier cases, we shall not go too far astray if we focus our attention on the strategies of actors most closely linked to the current world power: its leaders, their politico-strategic forces, the coalitions they manage, their economic agents, and their opinion leaders. The more we move forward in time, however, the more important it becomes to enlarge the range of strategies and to include world organizations.

Participants in global politics cope with major structural problems by "learning" new strategies. A useful way to analyze that process is to conceptualize it as regularly passing through four generation-long phases: those of Agenda-setting, Coalition-building, Macrodecision, and Execution (the ACME process). Four such phases constitute one cycle, as shown by Table 1. The phases lay bare the procedural structure of the long cycle as a political learning process: they make it explicit that problem resolution requires, in the first place, information, and an exploration of alternative courses of action.

That is followed by the coalescence of coalition around

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prominent leaders, and certain prominent alternatives, some of which are bound to offend vested interests. The coalitions are then likely to square off in sustained conflict, but one of them will prevail through a collective choice process. Once a decision has been reached, all that remains is implementation. Claimants to global leadership all participate in this process, but do so with special intensity in the phase of macrodecision. They activate and lead the coalitions that, via a global trial of strength (in past cases, a global war), validate the set of policies that will be carried to fruition during "execution". Let us now review these four phases in some more detail.

Agenda-setting is analytically the most elusive yet practically the most unsettling of the four phases of global political change; it also is quite crucial to understanding of what follows in the cycle. Adding to that interest is the fact that our own most recent experience of world politics (1973-2000) has been prominently colored by it.

Agenda-setting follows upon the close of the phase of execution in the preceding cycle, and is crucially shaped by that

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circumstance: the closing of the old agenda and the ensuing delegitimation of some features of the old order and of its leadership. Thus by 1850 it was becoming clear that France was no longer a significant threat to European and global security, and that the Vienna order of 1815 was in need of drastic reconstruction. The Industrial Revolution launched by Britain in the previous century was firmly established, and other economies were about to move into the van. Britain's position in Europe weakened significantly and the question of succession started to

arise, at first only in European but then also in global terms.

As old agendas fade away, new problems rise to prominence. When long-standing security problems disappear, new ones rise to command attention, especially those linked to competition for global leadership positions that might soon be vacated. Such problems in the past tended to be resolved by global wars. However, when important global problems are resolved that very success generates new problems. Thus the spread of the Industrial Revolution raised issues of economic and social organization centered on capitalism; it also created the resources that made possible an incredible spurt in knowledge generation, in the natural and also in the social sciences. Understanding the new

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world created by the Industrial Revolution became an urgent global problem.

Who might be the chief participants in this phase? We would look for them primarily among opinion-makers, especially those cultivating an expertise that responds to emerging global problems; but it might also be political leaders who formulate such problems with greatest visibility. After mid-nineteenth century, they might be John Stuart Mill, Herbert Spencer, Karl Marx, Fernand Lesseps, or Richard Cobden; among political leaders, Abraham Lincoln, Napoleon II, or Otto von Bismarck.

For global agenda-setting, issues come alive with particular saliency in media networks, in epistemic communities, during meetings and assemblies, and in inter-governmental settings. After 1973, the United Nations has increasingly served as a forum for raising and debating such global problems as those of the environment, food, desertification, and others. Agenda-setting is the phase par excellence for airing problems and reviewing policy proposals that ought to find a place on the global agenda, but it is not necessarily one in which complete agendas descend ready-made from on high; more likely they remain subject to continuous debate

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and revision. Agendas remain crucial to global politics throughout the course of the entire long cycle, but it is our contention that they undergo dramatic change and experience the first and most thorough of many debates in the phase of agenda-setting.

Coalition-building follows upon agenda-setting in a natural progression. The rising awareness of new global problems and the fading of old ones sets in motion a reshuffling of established coalitions, and the construction of new alliances around a new set of issues.

This coalitioning is the flip side of "deconcentration" that is now in progress. Over time the high degree of power concentration and the dominant position of the world power that characterized the global political system at the close of the last global war has now waned; global concentration is lost as multipolarity rises and as the weight of other powers, especially of challengers on land, increases. The previously effortless superiority of the world power gives way to a condition of low global concentrations that favor flexibility of alignments and the reconstruction of alliance systems [1].

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In other words, as might be expected, a lower ratio of power concentration (including economic power concentration) in the appropriately titled phase of 'deconcentration' creates conditions promoting realignment and encouraging coalitioning. Most generally such coalitioning takes the form of an alignment for and against maintaining global order, while responding innovatively to global problems.

A classic case of the formation of such new alliance systems is the case of European and global realignments after 1873. That phase began with the coming together of the Triple Alliance of Germany, Austria-Hungary, and Italy, that was begun by Bismarck in 1879, in response to which the Triple Entente of France, Russia, and Britain was built between 1890 and 1907. At the same time the Anglo-American "special relationship" crystallized after 1900, during the Spanish-American war, albeit quite informally. These were linkages that focussed on the rising power of Germany, and the impending changes in global leadership, but they also reflected differing approaches to other global problems.

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The agents of coalition-building are both political leaders and diplomats, and it would be a mistake to regard the process as exclusively or predominantly confined to the international or diplomatic level. Lasting political alignments take root and assume shape in an emerging global community and represent concern for common problems that reflect underlying value commitments. World parties play an important role here, at the interface of world politics and community. In the earlier cases, cultural and religious factors came to the fore; in the second British cycle the cultivation of a trading community proved to be significant [2]. More recently ideological factors, including adherence to democratic norms and practices, played a significant role. In all such cases global alignments were closely linked to national party alignments and regional orientations.

Macrodecision is the culmination of coalition-building. Analytically speaking this should be regarded as the time when actors in the global political system, arrayed in at least two major coalitions, choose among the rival agendas by deciding upon the composition of leadership for the next "term of office". In

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the past several cycles this has meant a generation-long period of global warfare, at the conclusion of which new global leadership emerged. But there is no reason why in the future this process could not assume a different form, as new procedures (yet to be invented) will be devised for coming to a macrodecision without any resort to large-scale violence; such new forms will in effect serve as substitutes for the entirely primitive method of world-wide warfare of potentially-catastrophic consequences. There are reasons to believe that within a democratic community such substitutes can in fact be constructed.

A good example of "macrodecision" is the global war

period bracketed by World Wars I and II (1914 -1945). It comprised two instances of major warfare, including sustained hostilities at sea, in which the identities of the major contenders, and of the rival coalitions and their agendas, remained virtually unchanged. It also comprised related warfare in the so-called "inter-war" period, such as the Sino-Japanese war, the Italian-Ethiopian wars, and the Spanish civil war. And furthermore, it was punctuated by a world-wide "Great Depression" (a structural crisis in the global economy paralleling a structural crisis in global politics) whose ravages only added to an impression of pervasive disorder and universal havoc. Out of this turmoil the United States emerged

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in a clear leadership position by 1945 -47.

The principal actors of "macrodecision" are global leaders of a politico-strategic bent. In World War II, Franklin Roosevelt and Winston Churchill were key examples. They assembled the global war coalitions, defined war aims, and marshalled forces for victory via sustained campaigns of global scope. They have been aided by military leaders (naval, army and airforce), some of whom (such as Marshall, or Eisenhower) rose to political prominence in the aftermath of war; the interests of military and naval organizations assumed paramount importance in such periods. It is an open question how precisely this politico-strategic role might evolve in the coming century, or if substitutes might be devised for the "global war" form of macrodecision.

Execution rounds off macrodecision, and the entire sequence; it is the quintessential "post-war" period. This phase has also been called that of "world power" because that is when the weight and influence of global leadership is at its peak. More precisely, it is a period of "honeymoon", because global leadership continues

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beyond the phase of execution but at a lesser degree of intensity and effectiveness.

Effectiveness is in part a function of power concentration. War victory leaves the world power commanding a lion's share of military and economic power in the global system. A glance back at the data in Note 1 confirms this point, and shows that in every execution phase to date the world power has enjoyed a healthy monopoly of seapower (50 per cent or over seapower concentration ratios). That meant unchallenged control over naval communications, and a powerful assist to installing and "locking-in" the post-war order. However, monopoly also ultimately leads to complacency, to "resting on one's laurels."

But the world power is not just powerful; as the "executor" of the agenda that the global war coalition carried in the macrodecision phase, and whose implementation is attempted in the post-war settlement, it also has legitimacy. The essential functions of "execution" reside in the creation of an improved institutional structure for the gradually evolving global system. Additions to formal international organizations that have incrementally occurred each century after 1609 include the Concert

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of Europe in 1815 and the United Nations, which incorporated a growing family of after 1945.

In relation to the global economy there is, in each post-war settlement, an increment of consolidation and in the direction of freer (though not totally free) trade. In the phase of execution, the activities of large corporations and banks have oftentimes been crucial; witness the Dutch East Indies Company after 1609, the English East India Co. after 1714, the Rothschild banks after 1815, and US multinationals after 1945.

An "executor" conception of global leadership carries a restrictive rather than an expansive definition of responsibilities. It is not to be conceived as the role of "world policeman," if seen as conferring an all-round duty of responding to every breach of the peace by an authorized and paid agent of a world organization. Rather it is one of more specialized concern for the safety of the essentials of the global order, and especially that of global communications that are its infrastructure. Earlier world powers did not act as all-round "keepers of the peace," but rather as the guardians of the sinews of global order: shipping lanes, freedom of the seas, suppression

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of piracy or the slave trade. This essentially voluntary duty, while responsive to allied concerns, was of a selective kind, even in periods of maximum effectiveness. It is likely to become more generalized only in response to greater global organization.

Production of global order has in recent years been taken as the basic output of global leadership, the claim being that 'order in world politics is typically created by a single dominant power' and that 'the maintenance of order requires continued hegemony.' Order, in this context, has meant peace and a liberal economy. In our perspective this is too expansive a view, and the expression "typically" needs qualification, since the proposition generalizes only from the most recent British and American cases. Global leadership has in fact "traditionally" consisted of carrying out a program of action, executed via a post-war settlement. Such a settlement could be said to have helped to mould "an order", but did not create order as such, and represented only one step in the evolution of the global system. Past the phase of execution a new agenda began to emerge, but though the legitimacy of global leadership was coming into

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question order never completely dissolved, even in times of global war.

The "post-war" period of the twentieth century (1945-1973) is a good example of "execution." The security threat presented by German-Japanese expansion was thwarted, and the two states found gradual inclusion into an emerging democratic community. That same community-in-becoming defined its membership more sharply by contrasting itself with a Soviet bloc that for four decades offered a non-democratic alternative but which ultimately broke up. That same community finally served as the basis for the information and knowledge revolution that is ever

more tightly weaving the world together.

This completes our account of the four phases of the "selection" process that constitutes, in effect, the program and calendar that aspiring candidates for global leadership would be well advised to follow. What about the "ingredients" that the candidates need to bring to that process?

Necessary Conditions

We recall that, earlier on, four "ingredients" were declared necessary for the "production" of global leadership:

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1. politico-strategic organization for global reach;
2. lead economy;
3. open society, and
4. responsiveness to global problems [3].

These are the "necessary and sufficient" properties of a nation-state, whose presence in adequate amounts is needed to achieve global leadership. It is, moreover, asserted that all four are "necessary" in that all four must be present, and that, furthermore, such a conjunction suffices to achieve it.

The present formulation is a more generalized, if also a more succinct list of the "factors of leadership" that were outlined in chapter nine of Long cycles of World Politics (Modelski 1987:220-233). It differs from the earlier statement in that it puts "insularity," previously shown as a separate factor, under preconditions favoring an organization of global reach, and treats "responsiveness to global problems" as a distinct condition; in the earlier treatment that latter point was discussed under "Pressures from New Problems" (ib.:231-3).

Table 2 sets out the necessary conditions of global leadership in a systematic form. We shall now discuss them in greater detail.

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Table 2: Necessary Conditions for Global Leadership

| Organization for global reach | Lead economy | Open society | Responsiveness to global problems |
|-------------------------------|--------------|--------------|-----------------------------------|
|-------------------------------|--------------|--------------|-----------------------------------|

(1) Why a necessary condition

| | | | |
|---|--|--|---|
| Wins global wars, keeps post-war settlement | Funds global programs, serves as role model of economy | Animates coalitions, role model of society | Global leadership serves global problems, leads world opinion |
|---|--|--|---|

(2) Organizational basis

| | | | |
|---------------|------------------|-----------------------|----------------------|
| Oceanic navy, | Lead industries, | Democratic potential; | Strong, active media |
|---------------|------------------|-----------------------|----------------------|

space fiscal strength party system

(3) Predisposing conditions

| | | | |
|------------|----------------|-----------------------|------------------------|
| Insularity | Market economy | Democratic experience | Free speech experience |
|------------|----------------|-----------------------|------------------------|

(4) Sources of commitment to global action

| | | | |
|------------------|-------------|-----------|------------------------------|
| Global interests | World trade | Alliances | State-of-the-world knowledge |
|------------------|-------------|-----------|------------------------------|

(5) Most relevant phase of the long cycle

| | | | |
|------------|-----------|----------------------|----------------|
| Global war | Execution | Coalition - building | Agenda-setting |
|------------|-----------|----------------------|----------------|

Characteristics of challengers

| | | | |
|------------|---------------|----------------------------|---------------------------|
| Large army | Large economy | Closed, controlled society | Weak, ethno-centric media |
|------------|---------------|----------------------------|---------------------------|

=====

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Politico-strategic organization for global reach is what wins global wars. In all the past five such wars, strong oceanic navies, rather than large armies, were the necessary conditions of victory and of attaining global leadership. Without superiority on the sea, armies alone could not have been deployed where and when needed. At the end of each global war, the "incoming" world power could therefore be shown to be commanding the world's greatest navy. In between "macrodecisions", global reach forces deterred global war, that is, protected the global status quo. An early, yet insufficiently well known example of such an organization was the navy of the King of Portugal in the 15th and 16th centuries.

A focus on oceanic naval forces makes it possible to sort out states with a serious stake in world affairs. Over the past half millennium, about four states have had, on the average, a significant stake of this sort at any one time, for a total of nine altogether, with another half-dozen in a regional role (Modelski & Thompson 1988). Nor is this situation much different in the 1990s, when over one half of the world's nuclear warheads are deployed at sea. Even though the membership of the United

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Nations has reached 180, only one or two of the member states (the United States, and maybe Russia) qualify as having oceanic navies, and maybe only another two or three could play the role of aspirants (China, or a future "Europe" including France, and Britain).

That is why what matters at the global level is not

military power in general, and armies in particular - though the latter do matter greatly, especially at the regional level - but the availability of globally-mobile forces. In the past these have meant navies, and today and in the near future they mean navies allied to air, space and information power.

Navies are "observables": warships are a form of military hardware that is measurable and therefore, for our purposes, exceedingly useful as indicators of global purpose. But the use of that indicator is not intended to imply that fleets in and of themselves are all that matters to organization for global reach, for they are only one crucial component. Obviously, they must be combined with other elements of military political power, as well as with diplomacy and good intelligence, and they must be well-led.

For it is political leadership at the highest level (via its decision-making processes) that combines these forces with the

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inputs of resources from economy, society, and culture to create the conditions that lead to the attainment of global leadership.

We might add that insularity represents a set of physical conditions which in the past have been conducive to developing a strong navy and a commitment to an oceanic role. It has also conferred on aspirants to global leadership an important measure of "surplus security," hence relative invulnerability, aiding in the effective deployment of forces at the global level. Insularity is still with us (in as much as the United States might be regarded as virtually a continental-sized island), and will continue to be a useful attribute of forces of global reach, even if the technical conditions affecting it might change. But there is no need to regard it as one of the four "necessary conditions" of our analysis.

In the past five hundred years, global reach as the necessary condition of global reach was given practical embodiment in oceanic navies. These were employed to deny the use of the sea for trade and other purposes during times of major war.

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In the future global reach might increasingly take the form of space power, specifically the power to deny the use of near

space to one's opponents, that is to their ability to operate communication, navigation, weather, and intelligence satellites for purposes of conventional and/or nuclear warfare. A monopoly of space power could be technically possible in the 21st century [4].

Maintaining a lead economy is the second basic condition of global leadership. In order that an economy aids in the "production" of leadership it must, of course, be an economy that is fiscally sound, of some weight and substance, and also a growing one at that, for only a substantial and a growing economy can be expected to fund the budgets that make it possible to mount force s of global reach. But the size of the national product alone does not suffice as a claim to leadership, and 'preponderance of material resources' is not a defining element of such an economy.

A large but stagnant economy cannot support world-wide enterprises. An economy will only be a reliably growing one if it is an economy that nurtures and brings forth leading industrial sectors.

We refer here to globally-significant sectors of the economy,

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that is, to lead industries. These are the industries that in a given time span and at certain locations radiate innovative impact upon the world economy. That impact travels via international trade, and gives new shape and meaning to global transactions. It also constitutes by itself an additional claim to leadership. Classic instances were the cotton and steam industries which launched the Industrial Revolution in the 18th century, and gave Britain commercial supremacy in the 19th. The location of future lead industries, if it can be reliably determined, is a leading indicator of world power and global leadership to be.

"Open society" is a term designed to spotlight democratic experience, and is intended as shorthand for freedom, openness, and democracy potential. We know that democracy, as a phenomenon of the modern era, takes off only in mid-19th century. That means that the West European era of global politics, one on which much of the substance of this analysis (and much of the conventional wisdom of the study of International Relations) are based, does not really offer us clear examples of democratic communities serving as the basis for global leadership. It is also the reason why the

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democratic experience features marginally, if at all, in historical accounts of world politics. Even Britain, with a liberal society and a parliamentary regime since 1688, did not acquire true democratic credentials until well past the most creative periods of its global involvement. Yet it is also worth stressing that all those acceding to leadership in that era belong to what in retrospect might be called the democratic lineage, that is, the lineage from which a more fully-formed type of democracy descended. They exhibited features of society that qualified them as belonging to that lineage on account of democratic potential because, relative to their competitors, they offered a superior promise of forwarding developments in the direction of greater freedom at home and openness abroad. As we look forward to the future, moreover, from Britain onward, it is not just democratic potential but also past democratic experience that more and more becomes a determining condition.

Conceived in this way, why is it that a free, open, and democratic society is needed to produce global leadership? We answer this question on two levels: at the empirical level we observe that all the cases listed in Table 1 under "leadership"

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are cases of democratic potential, or of democratic experience, superior to that of the challengers [5]. At the general level we argue that a free and open society provides a superior support framework for the evolution of cooperation, and provides the seedbed for strategies that in turn serve as the foundation for

global leadership. Robert Axelrod (1984) has shown how cooperation can start in clusters and thrive with rules that are "nice," provokable, forgiving, and clear.

Open/democratic societies provide the optimum conditions for the emergence and clustering of such strategies in the form of coalitions at national and global levels. By regularizing and stabilizing decision-making processes they allow for the differentiated growth of cooperative strategies; by fostering debate and protecting human rights they offer the context for the emergence of variety, hence creativity and innovation; and by civilizing conflict they make more likely the growth of "nice" strategies that are oriented to solving global problems and that, when successful, tend to cluster and enlarge the area of cooperation. That is why democratic alliances have generally been more productive and more enduring.

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In more concrete terms this means that a society aspiring to global leadership will value pluralism and possess a developed system of public organizations, including a well-functioning multiparty system and a rich network of private associations and interest groups. The combination and recombination of these elements produces the coalitions that contend over global problems and that, nationally and globally, are essential elements of the process we are studying, especially so in the phase of coalition-building. In coming decades these will serve as the building blocs of the global democratic community within which global war will become an anachronism, and problems will be resolved by democratic procedures.

Responsiveness to global problems is a necessary condition because global leadership is precisely the business of attending to urgent global problems. Global leadership is not a matter of asserting or flaunting power, nor is it the matter of exercising world dominion. It is an arrangement for marrying the interests of one nation-state with problems of the global system that are of pervasive currency and wide concern. Such a nation-state will likely be predisposed to develop such interests, be it on account of previous politico-strategic involvement, trading links,

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established alliances, or because knowledge of world-wide conditions is available. Such a nation-state also will tend to view its own national interests as closely linked with wider, more inclusive concerns that can become the basis for global action.

Analytically, responsiveness to global problems might be regarded as a mode of responding to world opinion. It provides legitimacy for international action; that is, it offers a justification in terms of which national action may also be regarded as having been undertaken in the service of broader interests. That is how the King of Portugal, for example, explained his expeditions to the East as producing "discoveries" that rebounded to the benefit of all.

More specifically, such responsiveness provides the basis for coalition-building. Cooperation occurs because certain strategies are seen to serve interests which are wider than those of any one

nation; global problems provide the most general of such platforms. In the wars of the Great Alliance against Louis XIV, for instance, the concept of balance of power served as the principle expressing the interest of all Europe in a "balancing" arrangement

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which limited the power of the Sun King.

Our argument therefore also implicitly asserts that global leadership is capable of producing public goods for the global system. These are goods or services that can benefit a public wider than that of the acting nation, including at the limit all of humanity. Peace and a liberal trading order are often cited as examples of such benign goods, but on the negative side there are also those who argue that "hegemony" produces such "bads" as war and exploitation.

The theory of collective goods (as formulated by Mancur Olson, cf. Abrams 1980, Ch.8) has helped clarify the logic of collective action and elucidate the concept of public goods ("goods which cannot provide benefits to one individual without simultaneously providing benefits to others"). It argues that such goods are provided more easily in small ("privileged") groups than in large groups that are likely to be beset by "free riding" problems. But it also points out that most public goods are not "pure," are subject to "crowding" (when their benefits are reduced by the consumption of others), and to exclusionary practices.

We observe that in past experiences of global leadership,

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"privileged" groups have been the rule. That is, the direct benefits of the provision of collective goods, such as those resulting from the discoveries, were subject to appropriation by the monopolies of the Portuguese and Spanish Crowns, which practiced wholesale exclusion; or at the close of global wars, by the winning coalitions. The broader benefits have only become apparent over the longer run, so that it is only in the 20th century, as the relevant groups have grown larger (opening up new organizational questions), that the problem of free riders has become more salient.

That is why our analysis avoids reference to such broad concepts as peace or the liberal order for characterizing the entire process, and focusses attention instead on circumscribed global problems that helped define the individual cycles. It implies neither the "benign" nor the "malign" version of the selection process, but seeks to match the benefits of particular policies against the costs they might have entailed.

Responsiveness is a function of the availability of mechanisms that translate a potentially inarticulate world opinion into agendas of global problems. Such is the function

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of actual or potential global political leadership. Effective parliamentary bodies, and other assemblies often perform such functions well. For instance, in the 19th century the British Parliament, on some occasions, came close to serving as a organ

of world opinion, and in the second half of the 20th century the Congress of the United States on occasion acts in a similar fashion. Such bodies function best when they interface closely with world-wide media and other cultural-educational networks; political definitions of problems are thereby filtered to the general public world-wide, and world opinion percolates up to the political bodies. Free media and open scholarly and epistemic communities perform such services better than weak or ethnocentric ones.

Ideologies might be regarded as standardized definitions of global problems that are associated with definite action programs. They formulate competing solutions to persistent global problems, and they provide a common orientation to the future across domains and regions. Thus, Marxism might be thought of as having articulated one set of responses to problems created by the Industrial Revolution. Modern democracy, meanwhile, could be seen

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as having risen in the context of the information revolution. Ideologies therefore come and go; over long periods they reflect fluctuations in world opinion.

In earlier times world opinion, that is, opinion relevant to the definition of global problems, had a rather narrow basis and was confined to some people in a few countries. Over the centuries, however, the social base of that opinion has widened steadily. The information revolution of the past century has significantly expanded it, making it now technically possible to conduct world public opinion polls. At the limit, the base of world opinion is coextensive with the human race.

Non-Selection of Challengers

The long cycle has produced global leadership, but it has also simultaneously produced a parallel but contrasting result: the phenomenon of "challenger." The structural process of global politics effects not only the rise and decline of world powers, but also the opposition, the tension, and the conflicts that attend upon the rise and defeat of challengers. Such circumstances, it must be noted, have so far tended to culminate in global war.

The non-selection of challengers is as much a part of the

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long cycle as is the selection for global leadership, and is subject to the same conditions outlined above. The sequence of phases is quite similar, except that it begins one phase earlier than we have observed in respect of world powers and it also ends sooner, with the defeat of the challenge in the phase of macrodecision. The set of necessary conditions is the same as well, except that they all appear, as it were, under the opposite signs, as when the society that would be expected to be open turns out to be closed or the economy turns out to be merely large but not of the leading kind (cf. Table 2, last line).

Phase movement of the challengers takes shape in the "E" phase of the long cycle, one in which the incoming world power "executes" its mandate by implementing the agenda of global problems. But the position then established does not confer total control or

world dominion, and an alternative focus of influence naturally emerges. Either the winning coalition, having served its purpose, dissolves or splits (as after 1814-5), or else the defeated challenger remains as a potential center of the opposition (as after 1714). Certainly, as indicated in Table 1, we can see

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that the ascent into global leadership moves in step with the coalescence of political and economic forces that, further down the road, might mount a challenge. This is a situation that cannot be regarded as unexpected, since power and its exercise do not remain unopposed or unanswered for long.

But the process takes a while to unfold. It moves first into the phase of agenda-setting, in which the legitimacy of global leadership begins to weaken and debate is opened anew about world visions. Again, this is not a debate in which one agenda crystallizes and to which all parties can instantly subscribe. Rather, we see a variety of agendas and issues, variously prioritized; we also see expansionists seeking traditional conquests, fundamentalists resisting all change, and monopoly interests strenuously defending their prerogatives. Gradually the debate evolves to the phase of coalition-building, during which the issues cluster into two or more opposed alliances. Aspiring challengers move toward the peak of their military power on land (cf. data in note 1), and tend to become the focus of one such alliance. Such alliances also form likely rallying points for movements of forcible expansion and the opponents of evolutionary

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change. The strength of that alliance will then be tested in the phase of macrodecision, via global war or some other form of collective decision-making, in which the challengers have so far been regularly defeated. It is as though the challengers were working on a set of negative instructions, assuring the defeat of their policies.

Characteristics of challengers mirror the process by which the opposition first takes shape and is then resolved in global war. We have already noted above, in Table 3 (see also Modelski 1987:225-7), the set of conditions that match those required for global leadership but in an opposite direction, on all four dimensions.

We notice, first of all, that the challengers we have considered were all regionally-based in Western Europe - which is another reason why that particular sequence of long cycles is a West European one. At their peak they laid claim to regional leadership, cast, however, in an imperial mode. As we look at "necessary conditions," we note that the challengers' economies were above all large, reliant on natural resources (such as agriculture and mining), and made up a significant portion of

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regional or even global output. At their own respective times Spain, France, Germany, and even the Soviet Union had substantial populations that could be mobilized for large

collective undertakings. But they were not lead economies oriented to world interactions, and in the field of innovation and new industrial sectors they were regularly outclassed by those who emerged successfully from the test of "macrodecision."

A large economy relies less on foreign trade, offers less to potential coalition partners, and tends to be linked to ethnocentric orientations which lead to the pursuit of national interests which are narrowly conceived and zealously pursued. Nor is it conducive to the acquisition of knowledge about global conditions. All of these elements, which are exacerbated in closed societies, translate into a slender basis for building coalitions. For such reasons, despite their wealth and power the Spain of Philip II (1560-1580) and the France of Louis XIV (1660-1688) each had basically only one regional base, and they each had trouble attracting significant allies world-wide. Similarly, Germany, being relatively less open than either Britain or the United States, became boxed into a continental system of alliances that turned out to be untenable but impossible to break out of after

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1914. The Soviet Union was even more isolated within its Iron Curtain.

Last but not least is the structure of the military organization, which in the case of challengers tended toward reliance on a powerful army (rather than navy) and on lightning land campaigns at the regional level. All the challengers were, in their time, the leading European military powers on land, even as they also participated in naval competitions at the global level. But in global wars they were shut out of the oceans, and the loss of global links fatally undermined their plans and skewed the contests against them.

The overall symmetry of these relationships is quite impressive. The positive qualities of successful candidates for global leadership contrast markedly with those of the failed challengers. What might puzzle those who reflect upon the folly of repeated global wars is the persistence of challenges based on flawed recipes, through at least four cases. Is it not time for challengers to abandon this false trail and, once and for all, to try a new path?

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Time and Space Dimensions

The long cycle of global politics, in its learning mode, has now been shown to be the process by which one state has risen to global leadership. That process is explained as the product of (1) a four-phased selection process, and (2) the co-action of four necessary conditions. It must be pointed out, however, that the phased process and the necessary conditions are two ways of looking at the same phenomenon. They report on the same condition but from two different vantage points, and they yield two different perspectives.

The relationship is, in fact, reciprocal. The four phases represent successive optimizations of each of the necessary conditions. Macrodecision (global war) represents that phase in

the process in which the forces of global reach exert their most decisive influence and experience their fullest realization. In turn, the four necessary conditions are the factors that explain successful performance in each of the four cycle phases. Schematically, the relationship might be represented as follows:

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| | | | |
|----------|--------------------|-----------|-----------------------------------|
| Phase of | Agenda-setting | optimizes | Responsiveness to global problems |
| | Coalition-building | " | Open society |
| | Macrodecision | " | Forces of global reach |
| | Execution | " | Lead economy. |

The first of these perspectives, that of the four -phase selection process, is temporal (or diachronic), meaning that it is oriented to the time dimension. The second is spatial, in that it has to do with the distribution of "production resources" in space, and may therefore yield, at different points in time, different (synchronic) snapshots of such distributions.

More precisely, we might ask: why conceptualize four phases and four conditions? This is because we conceive the selection process as unfolding in four dimensions: three spatial (left-right, up-down, forward-backward) and one temporal (time). The processes we are examining can be located and fully described on all relevant scales by reference to these dimensions. These dimensions can also be roughly identified with the economic, political, social, and cultural aspects of social time-space.

The long cycle is a model of long-term political development

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that represents a form of "symbolic synthesis" that is obviously fact-oriented, because it is governed by observables in social processes. But it is also a higher-level synthesis, as compared with historical narratives and in that respect is more economical with facts (Elias 1992:190).

Comparison with Kennedy

Paul Kennedy's (1987) work, while a sustained narrative account of the "Rise and Fall of the Great Powers" in the past half-millennium, does not present a full statement of the analytical model of the process that is being described (see also Modelski 1990b). But such a model might nevertheless be extracted from it, for purposes of highlighting the key features of this approach as compared with the "symbolic synthesis" outlined in the present account.

Table 3 effects a comparison of these two models of "rise and fall" under the categories so far emphasized in this presentation: those of the temporal selection process, and those of spatial, necessary conditions. Kennedy's account (1987:esp. at pp. xxi-xxiv) puts major emphasis on the two factors of military and economic power, and on their interaction; he presents full

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narratives of major wars, especially those he calls "coalition wars," but he generally neglects "softer" factors such as open society, and global problems. Nor does he, in our opinion, focus sharply enough upon issues of global competitiveness.

Table 3: Two models of "rise and decline"

| Long cycles (learning model) | "Rise and Fall of the Great Powers 1500 -2000" (Kennedy 1987) |
|--|---|
| Explanation of | |
| "selection" to global leadership of Portugal, Dutch Republic, Britain, United States; "non-selection" of Spain, France, Germany. | "rise and fall" of Hapsburg Spain, Britain, United States. |
| Selection process | |
| consists of four phases of Agenda-setting, Coalition-building, Macrodecision Execution: Ag -> Co -> Ma -> Ex period: 110 years | not explicit, but lays stress on coalition wars non-periodic |
| Necessary conditions | |
| Global reach potential inc. insularity economy Open society Responsiveness to global problems | Military power (M) Sustained economic growth Lead (E), inc. fiscal health |
| Interaction (co-evolutionary) effects | |
| Global politics co-evolves with global economy, community, and opinion. | Economy interacts with military power: E+ --> M+ --> E- --> M- (adaptation model) |

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Kennedy does, however, offer a model of politico-economic interaction that goes some way toward lending a distinctive dynamic to the process. He proposes that "rise" begins with uneven economic growth in one economy (E+), and that this generates military capacity (M+). The joint action of these two factors

explains the rise of a great power. But the exertion of military power drains resources and drive from the economy (E -), and dwindling economic strength in turn saps military power (M -), inducing decline. This is an "adaptation" type model that comprehensively covers both "rise" and "decline"; it implies four very general phases, but its periodicity is unspecified and there is no discussion of testing (which we would not really expect in a historical narrative anyway). We observe as well that this model focuses most of its attention on an adaptive interplay of economics and politics. Our own model, on the other hand, focuses on the

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phasing of the political process, but considers "interactive" (or co-evolutionary) effects in a more complex formulation (cf. Part II of this study).

We have now accounted for the rise of particular powers to global leadership, but neither our account nor that of Kennedy deals with the question of succession or lineage. Why is it that these powers, in both accounts, constitute a meaningful sequence and not just a random assortment of powerful states? In order to answer this question we must extend the time horizon of our discussion backward by another half millennium, and consider more fully the context within which the selection process has operated. On both of these counts we broaden our analysis beyond the framework utilized by Kennedy and most other students of this subject to date.

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II. THE EVOLUTION OF GLOBAL POLITICS

The Need for Broader Explanations

We have now essayed an explanation as to how and why four global powers, on a total of five occasions, prevailed over their opponents and maintained a period of global leadership. While arguably neat and tidy, this explanation is inadequate because it tackles only a part of the problem, and does not come to terms with broader questions that need to be asked if the process as a whole is to make sense. These inadequacies might be summarized as follows:

A thorough-going inquiry must go beyond individual long cycles that are marked by the influence of one single power, and pose questions about the nature of the entire process. Why is it that, since about 1500 but not before, most of these events have centered upon Western Europe? Why is it that the long cycle has been punctuated by a series of four major, global wars? Why is it that there seems to be a liberal bias inherent in this long cycle, in that the winners of these wars, and those attaining global leadership, might all be regarded as members of a liberal lineage that showed democratic potential?

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More basically, the piecemeal, one-case-at-a-time explanation implies "perpetual motion", the circulation of powers in an

endless coming and going of major states struggling to rise on an unending treadmill. It raises the problem of demarcation: why does that "rise and fall" begin in 1500, and how long into the future might it continue? While there might be good reasons to think that a larger and more basic process is at work here, it is not entirely obvious that it must always take the form of "rise and fall of the great powers."

The issue is joined most immediately over the question of when that process might be said to have commenced. Conventionally that beginning is set at about the year 1500, a date that, for the past two centuries in European historiography, has been regarded as marking the divide between modern and pre-modern times. This is how Kennedy (1987:3) explains his decision to start his account at that point. Gilpin (1981:Ch.3) gives no precise dates but he, too, adopts about the same time frame when he distinguishes between the pre-modern pattern of the "cycles of empires," and the modern world whose characteristic features are the nation-state and the world market. For Wallerstein, the onset of the capitalist world

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economy dates to the "long" sixteenth century, starting about 1450.

And Goldstein's long cycles start ca.1500, though some attention is also paid to Venice.

For those who choose to depict the operation of the global system, this is a wholly satisfactory procedure. World-wide communications on a routine basis, regular oceanic exchange and trade, let alone global political structures simply did not exist before 1500. An inventory of sea power in global politics would have to start at that time as well, because before it no navies could be found that maintained a global network of fleets and base.

On the descriptive level, that was all that could be done.

But those who search for causal explanations would find this procedure unsatisfactory. For even if we agreed that a date close to 1500 (and the sailings of Columbus to the Americas and of Vasco da Gama to India) marked the birth of the global system, including the global political system, the question remained how much earlier should we go if we wanted to determine the inception (or conception?) of that system. For in order that a global oceanic

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system be launched, certain necessary technological, social, political and economic preconditions would have to be satisfied. For instance, ocean-going ships and navigational aids such as the compass would have to be developed.

An excellent answer to these question was in fact given by William McNeill (1983), whose account of global political and military changes in the modern era begins with Sung China ca. 1000. His reasoning is supported by contemporary scholarship that has come to view this period of Chinese history, "China's greatest age," as the start of modernity in the global context. In other words, in order to give an adequate explanation of the process that ca. 1500 gave birth to the global system, we need to start in China some five centuries earlier.

We reach the same conclusion if we reason, deductively, about world system history. We agree with Frank (1991) that the entire process needs to be viewed as a whole, since it has exhibited significant uniformities ever since its inception in the Middle East some 5000 years ago. But it would also be wrong to regard that process as wholly uniform, for we must recognize within

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it certain major eras or phases. In that vein, we follow conventional designations fairly closely if we distinguish the ancient (or archaic) age (-3000 - -1000) from the classical one (-1000 - +1000), and view the modern age as starting at about 1000 (Modelski 1991). It is at that point that the world system might be postulated to have begun emerging as a global system (at the same time as a system of nation-states), in a process whose full unfolding is yet to be completed.

Eras of the Global System

Combining such empirical and theoretical considerations with the picture presented in Table 1, we arrive at a three-part classification of "eras of the global system," each of which is some 450-500 years in length:

1. Eurasian transition; starting ca. 930;
2. West European, starting ca. 1420, and
3. Post-West European, starting ca. 1850.

We call the first of these eras "Eurasian," because that is where the center of gravity of the world system for the previous one or two millennia had been. During this era, the Eurasian Silk Roads served as the backbone of the world system's communication network. The subsequent shift away from that system took some

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doing. The first thrust toward modern organization on a large scale took off in Sung China in the 10th century, and continued with the successive development of a number of globally-significant innovations. But in the 13th century, the experience and the resources of, at first North, and then South, China were captured by the Mongols who used them in an attempt to construct a world empire. For a time the rule of the Mongols extended from Eastern Europe, to Syria, to the Sea of Japan, and to the South China Sea, incorporating over 40 per cent of the world population (a proportion higher than that attained by any empire before or since). Mongol cavalry armies dominated the center of the world's landmass and threatened the continental fringes in Europe, Egypt, India, Southeast Asia, and Japan. It was the first truly Eurasian social and political system, with Renaissance Italy forming no more than an outlying part of it.

From a global perspective, the defining feature of the Eurasian transition era was the Mongol bid for world empire. But that was not all there was to it. The most important feature of that bid was its catastrophic failure, the utter collapse of the

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Mongolian design into devastation, disruption, and epidemic disease. The attempt to build a global political structure on the basis of imperial models of the classical era failed so completely that world system development was pushed in a new direction [6].

But there was more to the Eurasian transition than the failure of the Mongols. This positive aspect is captured by the term "Renaissance," which has been applied by historians to both the Chinese and the Italian periods of this era. For instance, Jacques Gernet has called the Sung dynasty the time of "Chinese Renaissance," while the same term has of course been used in reference to the Italian developments of the later Middle Ages. Both were strikingly innovative periods of high growth, urban vitality, and artistic excellence. But it was, in fact, the empire of the Mongols which served to diffuse the experience of the first to the second; they spawned influences still felt today.

This pattern of negative and positive development may be observed in the two subsequent eras of the global system. A recurring feature of the West European era has been attempts at universal dominion, in response to which "balance-of-power"

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coalitions were organized under global leadership that marked entire periods of this era. These times also gave rise to colonial empires, including the large British colonial holdings at the turn of the 20th century. But these were also times of vigorous competition, marked by feats of exploration and technological innovation, great economic expansion, and rapid population growth. In the post-West European era, whose shape we are only now beginning to discern, these tensions continue, though arguably in a more attenuated form.

The labels we attached to the eras of the global system refer to locations in space. We are thus arguing that the bulk of innovative activity in those periods was concentrated in one or another zone of the world system, that is, in the "active zone" of that particular period. But these eras might also be understood as phases in the evolution of the global system, which may be schematically represented as follows:

The Evolution of Global Politics

| | | Defining problem |
|-------------|---------------------|--|
| 930-1420 | Preconditions | Failure of world empire 1200 -1400 |
| 1420-1850 | Global nucleus | Balance of power in Europe after 1713 |
| 1850-(2300) | Global organization | Shape of world organization ca. 2100 |
| (2300) - | Consolidation | Stability of world organization |

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We propose, in other words, that the major project of the

formation of a global political structure is a learning problem that cannot be completed suddenly or without preparation. We also propose that the four major stages of that process can be roughly characterized as cultural (technological), social, political, and economic, and that they together might take more than a millennium to evolve.

In this larger scheme of things, we might then see the Eurasian transition as one in which the preconditions of later developments were laid out: both negatively, in that imperial designs were ruled out, and positively, because innovations of global significance were diffused world-wide and the building of large-scale political and economic organizations was initiated in several areas. The West European era was one during which a few nation-states provided a regional nucleus for global organization that may not have emerged otherwise; states in this region took advantage of earlier innovations, and undertook their own initiatives, to lay down world-spanning webs of economic, political and social connections which had their center in Western Europe. In the post-West European era we move beyond this nucleus,

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towards an organization of increasing density, and towards and increasingly oceanic global basing mode. This is a process that took off in the 19th century, gained force after 1945, is now gathering new momentum, but is likely to continue for the next two or three centuries. Beyond that a phase of consolidation, probably reaching out into space, will prospectively give it yet greater definition.

Long Cycles as Mechanisms of the Global Polity Process

Each (500-year) era of the global system process might also be regarded as one period of global politics. We might also say, as we have just seen, that the global system process defines, in broad terms, the program for global politics of its era.

More specifically, each period of the global political process might also be shown to comprise four long cycles, such as those we have examined in earlier parts of this study. On that account, each 120-year long cycle constitutes one phase of the global political process, that is, the process by which global political organization is constructed.

We have already seen, in Table 1, a series of five

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completed cycles. We can now complete that table with four more cycles in the era of "preconditions," shown in Table 4. We find that this era was launched with a surge of activity centered on the Northern Sung, and was followed by another that was characteristically "Southern Sung". The third cycle was propelled by the Mongols, who moved the center of global political activity to the Mediterranean, showing a "Genoan" and a "Venetian" cycle. In about 1420 the Portuguese initiated the process by which the nucleus of the global system emerged, and by 1850, with the take-off of the U.S. cycle, we see the beginnings of global organization. Table 4 sets out the full schedule of ten long

cycles, viewed as phases of the global political process; it presents a fully theoretical interpretation of this process.

Table 4: Global Polity Process (Long Cycles)

| Agenda-setting (global problems) | Coalition-building | Macro-decision (global war) | Execution | |
|---|----------------------------------|---|----------------------------------|-----|
| ===== | | | | |
| EURASIAN TRANSITION period (preconditions) | | | | |
| 930 Information | 960 Sung founded | 990 War with Liao | 1020 Northern Sung | LC1 |
| 1060 Global system base | 1090 Reformers: conservatives | 1120 War with Chin | 1160 Southern Sung | LC2 |
| 1190 World empire? | 1220 Mongol confederation | 1250 Pisa routed Fall of S. Sung | 1280 Genoa Mongol wld.emp. | LC3 |
| 1300 Organization of marit.trade | 1320 Galley fleet network | 1350 Genoa routed Mongol collapse | 1385 Venice Timur+1405 | LC4 |
| ===== | | | | |
| WEST EUROPEAN period (global nucleus) | | | | |
| 1430 Discovery | 1460 Burgundian connection | 1494 Wars of Italy & Italian Ocean | 1516 Portugal Spain | LC5 |
| 1540 Integration | 1560 Calvinist international | 1580 Dutch-Spanish wars | 1609 Dutch Republic France | LC6 |
| 1640 Political framework | 1660 Anglo-Dutch alliance | 1688 Wars of Grand Alliance | 1714 Britain I France | LC7 |
| 1740 Industrial Revolution | 1763 Trading community | 1792 Wars of Napoleon | 1815 Britain II Germany | LC8 |
| ===== | | | | |
| POST-WEST EUROPEAN period (global organization) | | | | |
| 1850 Knowledge | 1873 Anglo-American | 1914 World Wars | 1945 USA | LC9 |

| revolution | sp.relationship I & II | | | |
|-------------------|----------------------------------|------------------------------------|------|------|
| 1973 Community | 2000 Democratic transition | 2026 (global war substitute) | 2050 | LC10 |
| 2080 | | | | LC11 |

Political framework

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The phase structure of every long cycle is the same, throughout the table. As in the West European era, major wars also punctuate the four Eurasian transition cycles. These might even be called proto-global wars, on several grounds. The forces engaged in these conflicts were powerful, in fact they were the largest in the world at the time, and the central campaigns of the Mongol era shaped the world's military history for two centuries and brought about a temporary consolidation of the core of the Eurasian continent. What is more, just as in the later cases, sea power played an important part in them as well.

Table 4 also contains significant information under the heading of Agenda-Setting, where each entry shows the global problems which were central to the shaping of that particular long cycle. In that sense, the global problems orient a century-long sequence of global politics. For instance, in LC3 the series of events is shaped by a preeminently political problem, that is, by an energetic drive for world empire. While that drive attained considerable success, it never reached the stage of a consolidated world empire because it soon dissolved into autonomous units. The energy quickly dissipated, and the real winners turned out to be the Italian republics. We might argue that the result was a negative learning experience, a lesson about the irrelevance, if not the impossibility of constructing a world empire as a lasting structure of world organization.

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The problems that appear under "agenda-setting" derive in part from the working of the global polity process. They "program" each long cycle so that it can serve as a mechanism by which a global political structure might emerge. Specifically, referring again to Table 4, we would argue that the West European era was one of the formation of the global nucleus, that network of linkages around which cooperative structures gradually began to form in the world system.

We would argue further that, in order for such a nucleus to be constituted, four major learning tasks would need to be accomplished in sequence. First, an informational phase, that of oceanic discoveries wherein the broad outlines and the dimensions of the problem would be mapped out. In the second phase of integration, in which competing nuclear coalitions first faced off with rival designs, the initial elements of that nucleus would be brought together from one of these coalitions. In the third

phase, the political framework of that nucleus achieves definition, via a competitive balance-of-power system of nation-states that rejected world empire. In the fourth, the industrial revolution served to create an economic basis for the global system to be.

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In this way, one thing led to another since the solution to one set of problems opened up opportunities for tackling the next.

That is how the long cycle served as the instrument for the construction of a nucleus around which global organization is emerging in the current era, and that is moreover how we can demonstrate the existence of global problems. For the model predicts that global problems acquire saliency in the phase of agenda-setting. Specifically, to return to our example, we would expect "world opinion" to begin placing "discoveries" on the global agenda between 1430-1460, and start acting upon that agenda soon after. In other words, the existence of global problems postulated by the model can also be verified by historical evidence.

These arguments tend to support the position that long cycles in global politics are more than a mere churning of great states, the rise and fall of global powers. If they were, such cycles would be meaningless or worse for the world at large, or even for the players themselves. According to our argument, though, these processes possess a wider meaning and inhabit a more expansive universe, that of the construction of the global polity

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via the stages of preconditions, nucleus, and organization. That is what gives them long-range significance and accounts for the success of some and the failures of others. For it is those whose efforts contribute to the creation of a global order that have a good chance to garner broad support, and hence have better odds for success.

From Leadership to Organization

Most importantly, Table 5 allows us to demonstrate what we might mean by the theme of this study, the transition from global leadership to organization.

Strictly speaking, that transition begins with the inception of global organization. That is, before about 1000 humans had not the means and largely no desire to organize the entire planet, and had not evolved specialized organization for those purposes. It is true that some of the great conquerors such as Darius or Alexander, or the more powerful emperors of the Han or T'ang dynasties, might have had the aspirations to rule over all "four corners" of the 'civilized' world, but their practice always fell short of these aspirations because their means proved

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inadequate the task.

The situation started to change when our table begins, about 1000. In Sung China population growth, economic expansion, and

urbanization created the conditions under which the basic pre-conditions of global organization first emerged: a national market economy, gunpowder and firearms, a "learning society" founded on printing, and oceanic navigation based on the compass; all that combined with the concept of Mandate of Heaven to rule over the civilized world. The Sung exercised that mandate in a rather mild manner; it was the Mongols who, first organized by Genghiz Khan - a name that means Universal Ruler - translated that mandate into a drive to conquer Eurasia, and who, under Kublai Khan, the victor over the Southern Sung, came close to attaining that goal by projecting on an almost global scale the methods of organization devised by the empires of the classical period. But they failed to innovate and their system of order proved to be surprisingly short-lived. Timur's attempt to reassemble the conquests of the Mongols failed even more decisively (1405).

The Mongols collapsed after about 1350, but it would be unwise to dismiss theirs, and Timur's, failed experiment in world order

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as irrelevant to the study of world politics, for the remnants of that empire have been with us until quite recently. Russia, a dependency of the Mongol empire, established its national identity by defeating the Golden Horde and reaching out to the Pacific coast (1550-1650). The Ottomans, another earlier dependency of the Mongols, lasted until the 20th century. The Mughals, who descended from Timur, ruled India until the British displaced them in the mid-19th century. China was slow to recover from the Mongol conquest and was, until 1911, ruled by the Manchus (descendants of the Jurchen tribes who founded the Chin Empire destroyed by the Mongols in 1234, and whose language belongs to the Altaic group, of which the other sub-groups are Turkic and Mongolian).

The Mongol empire failed as an attempt at global organization on an inner-continental basis. Its failure brought forth an alternative form, one based on oceanic linkages, which we call global leadership. Applying methods first developed on a relatively small scale in the Mediterranean by the Genoese and the Venetians, a set of newly-emerging nations, the Portuguese, the Dutch and the British, projected these methods precociously

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from rather narrow West European bases onto a planetary scale. From these small beginnings, a nucleus of global organization gradually arose around certain major nation-states. Global leadership found its most recent manifestation in the position of the United States in the 20th century.

The nucleus of global organization first began to accrete on a regional basis in Renaissance Italy after 1420, as part of the alliances centered on Venice, and from the sixteenth century onward, in Europe, around global leadership and its coalition wars. The focus of diplomatic constellations soon became the Dutch Republic, and then Britain (the two soon known as the "maritime powers"), as well as the states that successively fought them, Spain, France, and Germany, and the counter-coalitions they attempted to rally. The high points of diplomatic organization were

the major peace settlements: the Truce of Antwerp (1609), the Peace of Westphalia (1648), the Peace of Utrecht (1713-4), and the Congress of Vienna (1814-5). It was as part of the post-Napoleonic settlement that a committee of the Great Powers that came to be known as the Concert of Europe was empowered, on British initiative, to deal with crises that might arise from that

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settlement. The remainder of the world system largely remained a British preserve.

Since that time, the nucleus of world organization (nuclear because based principally on global leadership and its European allies) has been subject to slow but steady expansion. After 1850, the Ottoman Empire joined the European system, and China and Japan were "opened" to the world; at the turn of the 20th century, the Hague Peace Conferences demonstrated the practicality of international conferences of universal scope, and so did the League of Nations in the interval between the two World Wars. The United Nations, established in 1945 on the initiative of the United States and with British cooperation comprised, in the Security Council, the primary nuclear element of a committee of the Great Powers. However, in the General Assembly it also acquired a more universal component, designed to be representative of all the world's national governments. So far the United Nations has not become the center piece of post-West European global politics. Instead, since 1945 the global political process has revolved primarily around the leadership of the United States, its initiatives (or lack of initiatives), and its coalitions and counter-coalitions.

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That is why, at the turn of the 21st century, we have advanced only partially toward the goal of improved global organization. Table 4 suggests that such progress, while continuing, will necessarily be slow. For, implied in our model of the global political process is a time table for the post-West European era. If we are correct in this analysis, that era should comprise four long cycles. Of these the first, now complete, is best characterized as having produced a new knowledge-basis for global politics. Science and technology have taken off since 1850, so that the technical basis for world organization is now in place, both in the positive sense of communication and information and also in the possibilities of destruction of previously unimaginable scope.

We are currently in the second cycle of that era, one whose principal global problem centers on "integration," that is, on laying the social foundations of global organization. We can now see that any lasting foundation of "civil society" is likely to be provided by an emerging global democratic community. It is from within such a community which might emerge alternatives

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to global war, those arrangements that on previous several occasions functioned as rather primitive selection

mechanisms for global leadership. These are major tasks whose solutions might not be arrived at for several more decades. It is only then, perhaps a century from now as a third cycle plays itself out, that global organization might acquire a full political framework of a federalist character which will be able to replace the forms of global leadership to which we have become accustomed.

According to this analysis, therefore, the structure of global politics of the coming century will continue to give a prominent, though not exclusive, place to global leadership. Global organization will be a mixture of leadership that is, or is not, supplied by the world power in the form that is by now "traditional", and of elements of universal organization in a federalist mode that are more recent, more tentative, and subject to evolutionary change. We might surmise that to the latter would increasingly gravitate the administration of routine tasks, while global leadership, acting through international institutions or ad hoc coalitions, will remain indispensable for resolving priority global problems.

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How does this analysis square with Robert Keohane's (1984:14) question: "How can cooperation take place in world politics in the absence of hegemony?" Two premises which lie behind this question include 1) the definition of hegemony as "preponderance of material resources," and 2) the observation that the "post-hegemonic era" had already begun at his time of writing. The answer to this question is: "Through improved (that is, non-hegemonic) international regimes."

Our initial answer questions the premises of Keohane's position by noting, first of all, that unlike his use of the term "hegemony" our concept of leadership does not require a "preponderance of material resources" but rather an economy with global leading sectors; it also calls for politico-strategic capacity for global reach, community organization, and responsiveness to global problems. In these broader terms, it is not obvious that the post-1945 term of US leadership has now ended;

indeed our analysis argues that it has not.

What is more, we need to distinguish between routine tasks of global organization and those problems that call for structural change and innovation. Once created, international

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regimes administer routine problems. We regard routine

cooperation even among egoists as non-surprising and as little in need of explanation as is some standard or minimum amount of conflict. Leadership, on the other hand, concerns crises and thus requires innovative responses which call for learning capabilities. The global system will continue to experience crises, and new global problems in response to which leadership of a "traditional" kind will continue to be called for. But such leadership is also likely to materialize in the context of an emerging democratic community that will temper it, and of an

increasingly well-informed world opinion that will scrutinize it ever more closely.

In short our answer is: Routine cooperation will continue even in periods of waning leadership (that is in phases of delegitimation, and deconcentration), but leadership will be needed for projects that will demand structural change in the 21st century.

We therefore postulate that the global political process will continue on its time path, following the same temporal structure that we outlined in considerable detail in the first part of this study. What we might expect to change

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is the specification of the necessary conditions of that process. While remaining defined by our four basic categories, the content of these conditions changes with the eras of global politics. We have summarized in Table 5 the conditions likely to characterize the era of "global organization," contrasting them with conditions appropriate to "world empire" (the Mongol version), and global leadership. We observe that a distinct global political structure corresponds to each period of global politics.

Table 5: Necessary Conditions for Global Political Structure

| | World empire | Global leadership | World organization |
|---------------------|--------------------------------|---------------------------------------|---|
| | Principal unit of organization | | |
| | Tribal | Nation-state | Federalist |
| | Necessary conditions | | |
| Politico-strategic | Cavalry, for continental reach | Navy, for global reach, in global war | Limited rapid reaction forces, earth monitoring |
| Economic | Tribute | Lead economy | Autonomous tax base, global corporations |
| Social | Stratified | Open society | Democratic community |
| Global problem base | By ruling clan | World power public opinion | Interactive media, world opinion |

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The third column of Table 5 specifies the conditions necessary for the emergence of full-fledged "world organization" of a kind sufficient to dispense with global leadership. These include: federalist-type organs of collective decision-making that might emerge as substitutes for global war, limited military forces

(including space capability for monitoring conditions on earth), an autonomous revenue-raising system, a democratic community, and grassroots-level mechanisms to facilitate responses to global problems.

It also follows from our analysis that such conditions must be brought into being through a learning process composed of a number of phases, in which problems such as consolidating substitute mechanisms for global war will be resolved. Unless and until such conditions are satisfied, real global organization will not be possible and strong doses of global leadership of the traditional kind will still be needed.

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An Evolutionary Model

The model offered here is an evolutionary process model of global politics. This is, however, not the place to fully elaborate the theoretical ramifications of an evolutionary approach [7]. At present, suffice it to say that such a model would rest upon the following core propositions:

1. Evolution, including social evolution, is a pattern of the universe.
2. Evolutionary processes necessarily occur in favorable conditions.
3. Evolutionary processes involve the mechanisms of variation, cooperation, selection, and reinforcement.
4. Evolutionary processes coevolve with other evolutionary processes.

All we wish to argue at this point is that evolutionary biology and the theoretical social sciences are "equivalent, albeit different examples of the use of one and the same general theoretical calculus (or model), the theoretical structure of which remains the same" (Schmid 1987:82; italics in original). There are, of course, important differences between biological organisms and societies, and this suggests the need to keep the two realms basically distinct. But the successes of the biological sciences give us an incentive to pursue what has been called the

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"evolutionary analogy" with respect to social organization.

The forms of organization that have been addressed in this paper are persisting populations of global political strategies (or policies). Those strategies persist when they successfully reproduce themselves. By "persistence" or reproduction we mean the transmission of a program, code, or set of generating rules to the next generation of strategies. We regard forms of global organization, such as empire or global leadership, as tight clusters (or populations) of strategies that are subject to evolutionary processes.

We then proceed from the fact of global political evolution. By extending the reach of our analysis further into the past, and forward into the future, we have established that global political structures have experienced substantial change. For we cannot fail to have noticed that in the past millennium, (a) global

organization

has changed extensively, from a condition of low connectivity and minimal structure to one of considerable connectivity and substantial structure today. Moreover, that development has been not merely one of change but has also shown (b) directionality

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(rather than randomness) in that, as just argued, the change might be said to have embodied a search for improved forms of organization appropriate to an expanding population. It has also traced an orderly path in space, and exhibited a temporal structure. Furthermore, it has been evolutionary in the sense of being (c) a "natural" process of trial and error, one that could be seen as if the unfolding of a process of evolution which does not require the postulation of a grand design or purposeful intention.

To show directionality or "naturalness" we need not embrace determinism or assume "progress," as in evolutionism. We postulate only that the evolutionary process unfolds in accordance with an inner logic and/or sequential structure, in that each phase creates the conditions for the next phase which itself must respond to new conditions in the environment. We have no reason to believe that, merely because global politics have moved toward more complex forms of organization, it has therefore become "better". To make such an argument other external criteria would have to be invoked. On the other hand, that process requires no special motivation other than "search for a better life", or, as

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Adam Smith put it in his attempt to account for what prompts humanity to save, the ever-present "desire for bettering our condition."

We also assume "sensitive dependence on initial conditions;" the beginning forms have an important effect on the course of development, in that they help cumulate the results of earlier changes. This is a basic reason why it is necessary to carefully examine the temporal path of structural change that we also describe as path-dependent [8].

Even though we need not invoke the postulate of progress, we do not believe that evolution is a random process, a matter of lucky accident, or "manna from heaven". Rather we assume that in the presence of certain specifiable conditions, in particular those of information, openness, variety, and complexity of interaction, political evolution will indeed occur. That is why we have paid such attention to specifying these kinds of conditions with care.

Conditions favoring political evolution are those in which evolutionary mechanisms operate most successfully. The first of these mechanisms is Darwinian "variation". Over time, some global political strategies will be reproduced in a routine fashion by

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copying; but others will undergo change, by mutation or combination. Additionally, new ones will be proposed as innovations for policy agendas in response to demands for the solution of global problems. Such combinations and recombinations

are more probable in free societies, hence are not as random as mutations are thought to be in Darwinian biology. These are the sources of variation in the population of strategies.

The political and social environment of this population of strategies, including specific institutions, should then be regarded as comprising a selective factor or mechanism that helps to determine which parts of the program will persist, and which policies shall be substituted for by new programs. In global politics this has been most directly the mechanism of macrodecision, which in the past five centuries assumed the form of global war but which might evolve new forms in the future. In global economics, on the other hand, the competitive environment of the world market has served as the basic mechanism of selection.

"Variation" and "selection" are the two Darwinian mechanisms. To these may be added two others: cooperation, and

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reinforcement. Cooperation is distinctly non-Darwinian, but it has been recognized more recently by those who see that evolution is not only about competition, but is also about altruism, synergy, and long-term collaboration as sources of advantages for survival. Reinforcement is essential to learning because it rewards successful solutions to social problems and it also cumulates the bases of evolution.

This is the "hard core" (in the Lakatosian sense) of the social evolutionary research program. It is actuated (with respect to global politics) by the conception of the long cycle as a phased and therefore also timed [9] evolutionary process that consists of the sequential activation of the four sets of mechanisms. To predict which particular cluster of policies will prevail, we need additionally to specify a set of conditions which are particularly favorable to the operation of these mechanisms. Table 4 serves as a test of this evolutionary model.

But there is more to evolutionary theory. It asserts the common descent of populations, and their common origin via a branching process, forming an evolutionary tree. "Co-evolution" is a term referring to "diachronic changes in two or more inter

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acting objects or systems," and Lumsden and Wilson (1981:367) have extended it to include the reciprocal effects of genetic and cultural evolution. In populations of policies we might speak not only of co-evolution of strategies in global politics and economics, but also of policy lineages.

Our earlier analysis has determined a set of conditions (shown in Table 2) that are "necessary" for selection to global leadership, and that will determine the shape of global organization. In the case of the politico-strategic organization, the relevant process is of course endogenous; that organization rises as part of the long cycle. But for the three other conditions we need to have recourse to a set of processes that are basically exogenous to the global political process. In Table 3 we show these as "interaction effects," because Kennedy lays so much stress on the interaction of politico-military and economic factors.

With respect to the lead economy, as just mentioned, we need to consult developments in the global economic system and inquire into the conditions that are likely to foster new global

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economic sectors in particular. Such "co-evolution of global politics and economics" is examined in greater detail in Modelski & Thompson (1995). Table 6 is a schematic representation of two processes: long cycles that have been the principal subject of this study, and K-waves, charting the rise and decline of leading sectors of the global economy.

Table 6: The Co-Evolution of Global Politics and Economics

| Long cycles (world powers and antecedents) | | K-waves (global leading sectors) | |
|---|----------------|---|------------------------|
| GLOBAL POLITY PROCESS | | MARKET ECONOMY | |
| Preconditions (Eurasian transition) | | Sung transition (Chinese) | |
| LC1 | Northern Sung | K1 | Printing and paper |
| | | K2 | National market |
| LC2 | Southern Sung | K3 | Fiscal framework |
| | | K4 | Maritime trade |
| | | Nautical -Commercial Revolution (Italian) | |
| LC3 | Genoa | K5 | Champagne fairs |
| | | K6 | Black Sea trade |
| LC4 | Venice | K7 | Galley fleets |
| | | K8 | Pepper |
| Global nucleus (West European) | | Framework of global trade (Burgundian) | |
| LC5 | Portugal | K9 | Guinea gold |
| | | K10 | Indian spices |
| LC6 | Dutch Republic | K11 | Atlantic, Baltic trade |
| | | K12 | Asian trade (VOC) |
| | | Industrial take-off (British) | |
| LC7 | Britain I | K13 | Amerasian |
| | | K14 | Amerasian |
| LC8 | Britain II | K15 | Cotton, steam |
| | | K16 | Rail |
| | | WORLD MARKET | |
| Global organization (Post - | | Information age | |

West European)

| | | | |
|------|---------------|-----|------------------------|
| LC9 | United States | K17 | Steel, electrics |
| | | K18 | Autos, electronics |
| LC10 | | K19 | Information industries |

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These sectors have been both industrial and mercantile, representing innovative spurts in economic and commercial organization. Just as the long cycle is a mechanism propelling the global political process, K-waves are the moving elements of the global economy.

With respect to the effect of free and open societies, we need to look into the rise and decline of social movements and the prospects for the expansion of the global democratic community. And concerning responsiveness to global problems, we need to review the processes that shape global opinion.

So much for global structural processes. For an even more complete picture, we need to consult developments at both regional and national levels. All in all, a complex task. But it might be rendered more tractable because we have taken the "necessary conditions" as initial proxies for these more wide-ranging ramifications.

Conclusion

Since the second half of the 19th century, two conceptions of evolutionary theory have existed side by side: the Comte -Spencerian view of social development, which emphasized stages of development

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that might be manifested in the history of humanity, and the Darwinian model that clarified the causal mechanisms of evolution to explain continuity and change in populations, but avoided the temptation for quick explanations of socio -historical processes. The Spencerian program fell into disuse, but in mid -20th century, Darwinian theory experienced a strong revival and reinvigoration through a "modern synthesis" (Huxley 1942,3rd ed.1974) that followed the revolution in genetics and the discovery of DNA. This theory, in turn, has been subject to much critical analysis (Pollard 1984). Our model of global political evolution combines these two conceptions.

Where does our model stand on some of the major themes and debates that have characterized evolutionary thought? Hallpike (1986:19ff) distinguishes four types of themes: whether evolutionary processes are endogenous, or exogenous; whether the theories to explain them are or should be structuralist or atomist; whether they are materialist or idealist, and whether the processes are deterministic or random (stochastic).

Briefly, we would argue that the global evolutionary process can be studied, in the first instance, as an endogenous process.

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But it is also clear that each of its necessary conditions in turn depends on other evolutionary processes that are exogenous to it (for instance, the lead condition of the economy depends on the development of global leading sectors within it). These other processes are in turn nested in yet other exogenous processes (that is, to continue the same example, in the evolution of the entire world economy). The picture is complex indeed.

Our approach also is clearly structuralist, in that it proposes that persisting clusters of strategies form emergent global political macro-structures whose properties cannot be deduced from the parts composing them. It focusses on structural transformations as well. The concept of the long cycle as a selection process propelled by a set of necessary conditions makes it plain that both "ends" and "means", both idealist (agendas, free societies) and materialist components (politico-strategic, and economic power) are equally involved. Finally, the model is neither deterministic, nor does it assume randomness, but it rather favors directionality without projecting a fixed content for it.

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The directionality of evolutionary politics is that of "organized complexity" (Davies 1984:239-240). The complex organization of living organisms can be shown to arise spontaneously given the existence of an ensemble, that is, a large collection of similar systems. Complexity has been defined as the ability to make transitions, that is to evolve. In our case, the relevant collection is the population of strategies or policies, past, present, and future. That way experiments will occur with alternative strategies until, in favorable conditions, a useful innovation comes along that is selected out and then cumulates through amplification. The accumulation of countless innovations, large and small, establishes systems as complex as modern market economies or free democratic communities [10].

That is why we view this as an open-ended model that does not posit a final goal or destination for the processes that it is analyzing. All it does is postulate an evolutionary "inner logic," that is, the requirement that the processes evince a time-space structure that constrains them.

Notes

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1. This is illustrated below with respect to four previous cycles of data on sea and land power concentrations, which is a good indicator of the degree to which the world power, and the challenger, respectively command forces of oceanic and continental

impact. For each world power the range of that index stretches over the phases of Execution (EX) and Coalition -building (CO). A high ratio, in excess of .500, means that over one half of the capital warships in the global system were commanded by that world power. In each case, the range shown for the EX phase is consistently higher than the range for the CO phase. For each challenger, the table shows the peak of an index of army concentration in Western Europe, which usually falls close to the end of the CO phase.

| World power | Phase | | Range of seapower concentration ratios |
|----------------|-------|-----------|--|
| Portugal | EX | 1516-1540 | .597 - .511 |
| | CO | 1150-1580 | .425 - .202 |
| Dutch Republic | EX | 1609-1640 | .557 - .476 |
| | CO | 1660-1680 | .335 - .260 |
| Britain I | EX | 1716-1740 | .522 - .461 |
| | CO | 1763-1792 | .448 - .332 |
| Britain II | EX | 1815-1850 | .660 - .462 |
| | CO | 1873-1914 | .477 - .436 |
| United States | EX | 1945-1973 | 1.0 - .713 |

| Challenger | End of CO phase | Observed peak of West European power concentration | |
|------------|-----------------|--|------|
| Spain | 1580 | 1560 -64 | .649 |
| France I | 1688 | 1690 -94 | .484 |
| France II | 1792 | 1800 -04 | .537 |
| Germany | 1914 | 1910 -14 | .366 |
| | | 1940 -44 | .486 |

Sources: Modelski and Thompson 1988:110 -112, for seapower concentration ratios, and Rasler and Thompson (1994:Ch.2) for West European army concentrations.

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2. As shown by Daniel Whiteneck's (1993) research on the network of British commercial treaties after 1750.

3. Or else we might say that global leadership is brought about or "caused" by a "production function" constituted of these four factors.

4. Department of Defence spokesmen now claim that "space control" has become "as important to the USA as sea control capabilities are to the exercise of maritime strategy" (SIPRI YEARBOOK 1991:58 -60).

5. None of the other approaches to the rise and fall of world powers include an analysis of the democratic experience.

6. The communist international system, ca.1950, comprised much the same land area as the Mongol empire ca. 1280.

7. Traditionally, the study of evolution is divided into two areas, macroevolution and microevolution, that is, description (whether evolution has occurred, and the theory of descent), and explanation (the mechanisms of evolution) (see e.g. Ayala 1982; Pollard 1984). For a full discussion see Modelski 1994.

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8. David (1988:18) describes processes whose outcomes are path-dependent as those dynamic processes in which the position and motion of the system, and its constituent sub-systems, are "sensitive to initial conditions".

9. The fact of regularity of the long cycle, as of other global processes may not, in and of itself, be altogether surprising. According to Paul Davies (1984:241,57) "periodic motion, or oscillation, is perhaps the most widespread example of order in physics"; indeed "physical systems which display exponential behavior are also likely to display periodic 'sinusoidal' behavior". But it does pose the question as to the mechanism of such regularity, and leads to the intriguing hypothesis of a social-evolutionary clock. Such a clock might be stochastic in character, governed by a constant probability of a certain amount of mutation (innovation, that also might cluster in particular time periods) (cf. accounts of evolutionary molecular clocks in Dobzhansky et al. 1977:308-313, Ayala 1984). It could also be metronomic, timing such change. Possibly some evolutionary processes, such as the long cycle of global politics, might serve to time others.

10. Robert Wesson reaches "beyond natural selection" to chaos theory. He views (1991:144) the genome, whose essence is self-organization, as an "attractor" : a "set of permitted states of a system", that is, linked attractors at all levels of genetic stability", that are latent patterns for making a structure. "The genome is a plan (or a combination of many plans) for building an organism; it is a pattern or a program".

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